

**IN THE CLAIMS:**

Claims 1, 12-15, 31, 32, 36, and 37 were previously withdrawn. Please cancel claim 39 herein. Claims 2-11 and 17-29 were previously canceled. Claims 16, and 30, 33-35, 38-42 have been amended herein. All of the pending claims are presented below. This listing of claims will replace all prior versions and listings of claims in the application. Please enter these claims as amended.

**Listing of the Claims:**

1. (Withdrawn) A nucleic acid sequence encoding the peptide of SEQ ID NO:6 or a part of the peptide of SEQ ID NO:6, wherein said part has the immunogenicity of a 9 kD Mycobacterium avium subspecies paratuberculosis peptide of SEQ ID NO:6 and further has at least 85% homology with nucleotides 34 through 366 of the nucleotide sequence of SEQ ID NO: 5.

2. through 11. (Canceled).

12. (Withdrawn) A DNA fragment comprising a nucleic acid sequence according to claim 1.

13. (Withdrawn) A recombinant DNA molecule, comprising: a nucleic acid sequence according to claim 1 under the control of a functionally linked promoter.

14. (Withdrawn) A live recombinant carrier, comprising: a nucleic acid sequence according to claim 1.

15. (Withdrawn) A host cell, comprising: a nucleic acid sequence according to claim 1.

16. (Currently amended) A 9 kD, as determined by gel electrophoresis on a polyacrylamide gel, Mycobacterium avium subspecies paratuberculosis protein or an immunogenic fragment of said protein, wherein said protein or immunogenic fragment thereof has a sequence homology of at least 90% to the amino acid sequence as depicted in SEQ ID NO: 6.

17. through 29. (Canceled).

30. (Currently amended) A ~~composition~~ vaccine comprising: at least one Mycobacterium avium subspecies paratuberculosis protein according to claim 16 and a pharmaceutically acceptable carrier.

31. (Withdrawn and currently amended) A ~~composition~~ vaccine comprising: the nucleic acid sequence of claim 1 and a pharmaceutically acceptable carrier.

32. (Withdrawn) The protein according to claim 16 or the immunogenic fragment of said protein, together with a pharmaceutically acceptable carrier.

33. (Currently amended) The ~~composition~~ vaccine of claim 30, further comprising an adjuvant.

34. (Currently amended) The ~~composition~~ vaccine of claim 30, further comprising an additional antigen of a cattle pathogen, an antibody against said cattle antigen or genetic information encoding said cattle antigen.

35. (Currently amended) The ~~composition~~ vaccine of claim 34, wherein said cattle pathogen is selected from the group consisting of Bovine Herpes virus, bovine Viral diarrhea virus, Parainfluenza type 3 virus, Bovine Paramyxovirus, Foot and Mouth Disease virus, *Pasteurella haemolytica*, Bovine Respiratory Syncytial Virus, *Theileria* sp., *Babesia* sp., *Trypanosoma* species, *Anaplasma* sp., *Neospora caninum*, *Staphylococcus aureus*, *Streptococcus agalactiae*, *Mycoplasma*, *E. coli*, Enterobacter, Klebsiella, Citrobacter and *Streptococcus dysgalactiae*.

36. (Withdrawn) A method for the preparation of a vaccine, said method comprising: admixing the nucleic acid sequence of claim 1 together with a pharmaceutically acceptable carrier.

37. (Withdrawn) A diagnostic kit, comprising: suitable detection means and a nucleic acid sequence according to claim 1 or a primer thereof.

38. (Currently amended) An isolated 9kD, as determined by gel electrophoresis on a polyacrylamide gel, Mycobacterium avium subspecies paratuberculosis peptide having a sequence homology of at least 90% compared with the amino acid sequence of SEQ ID NO: 6.

39. (Canceled).

40. (Currently amended) A vaccine comprising ~~The~~ the isolated peptide of claim 39 ~~38~~ together with a pharmaceutically acceptable carrier.

41. (Currently amended) A ~~composition~~ vaccine comprising a peptide consisting of the amino acid sequence of SEQ ID NO: 6.

42. (Currently amended) The ~~composition~~ vaccine of claim 41, further comprising a pharmaceutically acceptable carrier.